

WHAT IS CLAIMED IS:

1. A radiation image sensing apparatus comprising:

5 an image sensing unit which is capable of non-destructive reading, adapted to sense an object image by allowing radiation from a radiation source to pass through an object; and

10 a control circuit adapted to perform control to stop emission of radiation from the radiation source on the basis of a signal obtained from said image sensing unit by non-destructive reading in the image sensing operation.

15 2. An apparatus according to claim 1, further comprising a switching circuit adapted to switch reading modes of said image sensing unit, said switching circuit switching the reading mode of said image sensing unit to a non-destructive reading mode in the image sensing operation.

20 3. An apparatus according to claim 1, wherein said image sensing unit includes a pixel portion including a photoelectric conversion element and a reading transistor, the photoelectric conversion element of the pixel portion being connected to a
25 control terminal of the reading transistor.

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4. An apparatus according to claim 3, wherein a load is connected to one main electrode terminal of the reading transistor, and the transistor is formed by an amplifier having a voltage amplification factor of substantially 1.

5. An apparatus according to claim 4, wherein the load is a constant current source or a resistor.

6. An apparatus according to claim 3, wherein a switching transistor adapted to select a pixel portion in a row direction is connected in series with the reading transistor.

7. An apparatus according to claim 3, wherein a reset transistor is connected in series with the photoelectric conversion element, and the reset transistor is controlled in accordance with a mode switching signal to switch the reading mode to a normal reading mode or a non-destructive reading mode.

8. An apparatus according to claim 1, wherein said control circuit comprises a pattern recognizing circuit adapted to perform pattern recognition on the basis of an output from said image sensing unit, a detection circuit adapted to detect a radiation amount on the basis of the pattern recognition result obtained

by the pattern recognizing circuit, and a generation circuit adapted to generate a reference value for a most appropriate radiation amount on the basis of the pattern recognition result obtained by the pattern recognizing circuit.

9. An apparatus according to claim 8, wherein said reference value is generated for a most appropriate radiation amount on the basis of the pattern recognition result obtained by the pattern recognizing circuit.

10. An apparatus according to claim 8, wherein said control circuit detects a radiation amount by using the detection circuit while performing non-destructive reading from said image sensing unit in the image sensing operation, and stops emission of radiation from the radiation source when the radiation amount becomes not less than the reference value.

11. An apparatus according to claim 8, wherein said control circuit detects a most appropriate image sensing time while performing non-destructive reading from said image sensing unit in the image sensing operation, and stops emission of radiation from the radiation source when the image sensing time reaches the most appropriate image sensing time.

12. An apparatus according to claim 8, wherein said control circuit includes an addition circuit adapted to add outputs from said image sensing means.

5 13. An apparatus according to claim 12, wherein the addition circuit performs weighted addition based on a reference pattern.

10 14. An apparatus according to claim 13, wherein the reference pattern is generated on the basis of the pattern recognition result.

15 15. An apparatus according to claim 1, further comprising a difference circuit adapted to obtain a radiation image sensing output by subtracting an output from said image sensing unit which is obtained before emission of radiation from an output from said image sensing means which is obtained after emission of radiation from the radiation source is stopped.

20 16. An image sensing method for a radiation image sensing apparatus including an image sensing unit which is capable of non-destructive reading and adapted to sense an object image by allowing radiation from a radiation source to pass through an object, comprising
25 the step of performing control to stop emission of radiation from the radiation source on the basis of a

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signal obtained from said image sensing unit by
non-destructive reading in the image sensing operation.

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